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BRIEFER ARTICLES

THE CINCHONA STATION

The lease of the Cinchona Station by the Smithsonian Institution on behalf of a group of contributing American botanists was interrupted by conditions existing during the war. It has now been resumed, and the laboratory will be available for American botanists during the coming year.

This tropical laboratory, in a well kept botanical garden containing many exotic trees, shrubs, vines, and herbaceous perennials from all quarters of the earth, is located at 5000 ft. elevation, on the southern slope of the rugged Blue Mountains of Jamaica, within half an hour's walk of an undisturbed montane rain forest.

The dry ridges and sunny valleys of the south side of the Blue Mountains offer many types of peculiar ferns, epiphytic bromeliads, grasses, mistletoes, and lianes. In the rain forest of the north side are to be found many species of liverworts, mosses, and ferns, the latter ranging from the very diminutive epiphytic species of *Polypodium*, only an inch or two in height, to the scrambling species of *Pteridium*, *Gleichenia*, or climbing *Lomaria* of many yards in length, and the great tree ferns, 40 ft. in height. There are also many interesting native species of trees, shrubs, and vines which together make parts of the forest a practically impenetrable jungle. There are great stretches of the northern slopes of the Blue Mountains, within a day's walk of Cinchona, that have never been explored by the botanist, not even by the collector.

Botanists wishing to study plants of the lowlands or of the sea coast can make their headquarters in Kingston, and such workers have always had the use of the library, herbarium, and laboratory at Hope Gardens. These gardens also contain a fine collection of native and introduced tropical plants, offering much material for morphological and histological study. Cacti, agaves, and other xerophytic plants of the seacoast, and the algae of the coral reefs along the shore, afford still other types of vegetation of great ecological, developmental, and cytological interest. Castleton Garden, the third botanical garden of the island, has a very different climate from either Cinchona or Hope, for it is located in a hot steaming valley, 20 miles north of Kingston, where

cycads, screw pines, palms, orchids, figs, ebonies, the gorgeous *Amherstia*, and many other tropical trees grow luxuriantly.

All in all, Jamaica probably offers the botanist as great a variety of tropical conditions within a day's walk of Cinchona and a day's drive from Kingston as can be found anywhere in an area of this size. It is evident that the opportunities for the study of many kinds of botanical problems are abundant at Cinchona, Hope, and Castleton. In fact, there are many botanical problems of prime importance which can be studied only in such environments.¹

Any American botanist wishing to work at Cinchona may be granted this privilege by the Cinchona committee, consisting of N. L. BRITTON, J. M. COULTER, and D. S. JOHNSON. Inquiries for this privilege and for information regarding the conditions under which it may be granted should be sent to the writer.—D. S. JOHNSON, *Johns Hopkins University, Baltimore, Md.*

CHROMOSOME NUMBER IN THE SEQUOIAS

For some years we have been concerned with cytological studies in the genus *Sequoia*. In particular a review of the evidence presented by LAWSON² on the life history of *S. sempervirens* has been attempted. That considerable interest attaches to this genus is obvious, and certainly the information available in regard to the life history of *S. gigantea* is meager. The present note is intended primarily to call attention to certain points which have been indicated in our preliminary studies.

LAWSON reports that, in his material collected at Stanford University, California, the pollen grains are formed during the second or third week of December, and that the pollen is shed during the first week of January.³ In our experience, extending over some three years, the pollen is often mature in September and rarely is it found on the tree after November. Our observations have been made on trees of the same size growing in three different localities: Berkeley, Redwood Peak, and Mill Valley, California. There is great variation in the time of pollen shedding. Two trees standing side by side may show a difference of two weeks to a month in the occurrence of this phenome-

¹For further details see Science 43:917. 1916, and Popular Science Monthly, January, 1915.

²LAWSON, A. A., The gametophytes, archegonia, fertilization, and embryo of *Sequoia sempervirens*. Ann. Botany 18:1-28. 1904.

³SHAW, W. R., Contribution to the life history of *Sequoia sempervirens*. Bot. Gaz. 21:332-339. 1896.